

Mathematics Colloquium

RIP: Row Integration by Parts

John A. Rock
Cal Poly Pomona

Friday, May 4, 2018
4:10 – 5 p.m.
Building 53 Room 206

Abstract

The tabular method for integration by parts is not as limited as its reputation may suggest. By focusing on the information generated with each row, the tabular method proves to be a streamlined and efficient bookkeeping technique for integration by parts. This talk features several examples exhibiting the utility of the technique, referred to as row integration by parts or simply RIP, and includes the ‘tic-tac-toe’ example made famous by the film *Stand and Deliver*. The RIP method allows for an elegant derivation of Taylor’s Formula with integral remainder as well as the Laplace transform of the n th derivative of a suitable function. Perhaps most importantly, the RIP method is easy use and easy to learn. A worksheet will be provided so members of the audience can take a RIP at the technique themselves. Additionally, in recognition of Star Wars Day (May the 4th), the talk will be filled with references to the original trilogy.

About the speaker : Dr. John A. Rock is an Associate Professor and the Graduate Coordinator in the Department of Mathematics and Statistics at Cal Poly Pomona. Dr. Rock obtained his PhD from UC Riverside in 2007. His thesis *Complex Dimensions of Fractal Strings and Multifractal Analysis of Mass Distributions* was developed under the guidance of his advisor Dr. Michel L. Lapidus. His research typically focuses on the development of a theory of complex dimensions for fractals in Euclidean space via so-called fractal zeta functions. Dr. Rock strives to get students involved in his research endeavors, but lately he has become more involved in broadening participation in mathematics across the country with an emphasis on students in the CSU system. Also, he has a pet project dealing with a version of the tabular method for integration by parts, called RIP for ‘row integration by parts’, and creating a set of corresponding YouTube videos.

Cookies will be provided before the talk at 4 p.m.
in the same room as the talk, Building 53 Room 206.